



Kolloquium

Thursday,

21st November
2013

at: 5.15 pm

Gustav-Mie-
Hörsaal,
Theodor-Lieser-
Str. 9, 06120
Halle

*Coffee will be
served from
4.45 pm!*

Prof. Ben Schuler

Biochemisches Institut, Universität Zürich, Switzerland

Probing the polymer properties of unfolded and intrinsically disordered proteins with single-molecule spectroscopy

Intrinsically disordered proteins (IDPs) lack a well-defined three-dimensional structure, but are involved in a wide range of biological functions. Single-molecule fluorescence spectroscopy can provide intramolecular distance distributions and reconfiguration times under a wide range of conditions, which enables a detailed polymer physical analysis. Many equilibrium and dynamic properties of IDPs can be understood surprisingly well on the basis of polymer theory.

Representative publications:

Soranno, A., et al., Quantifying internal friction in unfolded and intrinsically disordered proteins with single-molecule spectroscopy. *Proc. Natl. Acad. Sci. USA* 109, 17800–17806 (2012)

Hofmann, H., et al., Polymer scaling laws of unfolded and intrinsically disordered proteins quantified with single molecule spectroscopy. *Proc. Natl. Acad. Sci. USA* 109, 16155–16160 (2012)

Müller-Späh, S., et al., Charge interactions can dominate the dimensions of intrinsically disordered proteins. *Proc. Natl. Acad. Sci. USA* 107, 14609–14614 (2010)

